Amendments to the Claims

This listing will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A non-asphaltic underlayment comprising:

a glass fiber-based substrate in which a first surface thereof is directly adhered to ~~a coatable laminate or~~ a breathable thermoplastic film having a minimum thickness of 2 mils, the breathable thermoplastic film selected from the group consisting of a polyurethane based thermoplastic film, an ethylene-methacrylate or ethylene acrylic acid based thermoplastic film, a mirco-porous polyolefinic thermoplastic film, a micro-porous polyester thermoplastic film and combinations or multilayers thereof, said breathable thermoplastic film imparts water-resistance to the underlayment while maintaining breathability thereof, the breathable thermoplastic film ~~or coated laminate~~ having a minimum moisture vapor transmission rate of greater than about 3 perms; and

~~at least one of~~ the breathable thermoplastic film~~, coated laminate or glass fiber-based substrate~~ further comprising an adhesion improvement component that is blended with the breathable thermoplastic film to improve adhesion between the breathable thermoplastic film ~~or coated laminate~~ and the glass fiber-based substrate.

2. (Currently Amended) The non-asphaltic underlayment of claim 1 further comprising a skid-resistance component in the breathable thermoplastic film ~~or coated laminate~~, the skid-resistance component comprising at least one of ethyl-vinyl acetate or malefic anhydride grafted ethyl-vinyl acetate.

3. (Currently Amended) The non-asphaltic underlayment of claim 1 further comprising a second breathable thermoplastic film ~~or coated laminate~~ located on a second surface thereof.

4. (Previously Amended) The non-asphaltic underlayment of claim 1 wherein the substrate is woven or non-woven.

5. (Previously Amended) The non-asphaltic underlayment of claim 4 wherein the substrate is a non-woven glass-fiber based substrate.

6. (Cancelled).

7. (Cancelled).

8. (Cancelled).

9. (Original) The non-asphaltic underlayment of claim 1 wherein the substrate has a thickness from about 5 to about 60 mils.

10. (Original) The non-asphaltic underlayment of claim 1 wherein the breathable thermoplastic film is a polyurethane based thermoplastic.

11. (Original) The non-asphaltic underlayment of claim 1 wherein the breathable thermoplastic film is an ethylene-methacrylate copolymer based thermoplastic.

12. (Previously Amended) The non-asphaltic underlayment of claim 1 wherein the breathable thermoplastic film has a thickness of about 2 to about 10 mils.

13. (Cancelled)

14. (Cancelled)

15. (Currently Amended) The non-asphaltic underlayment of claim 1 ~~13~~ wherein the adhesion improvement component ~~tie layer~~ is ethyl methyl acrylate (EMA) having a methyl acrylate level of about 18% or greater.

16. (Previously Amended) The non-asphaltic underlayment of claim 1 further comprising at least one of a water repellent material, an algaecide, an herbicide, an antifungal material, a surface friction agent, a flame retardant, or a coloring dye.

17. (Original) The non-asphaltic underlayment of claim 1 wherein the underlayment is a base sheet of a peel and stick roofing product.

18. (Currently Amended) A non-asphaltic underlayment comprising a substantially non-water-resistant polypropylene substrate in which at least a top surface thereof is directly adhered to a polyurethane based thermoplastic film, said polyurethane based thermoplastic film imparts water-resistance to the underlayment while maintaining breathability of the underlayment, the breathable thermoplastic film having a minimum moisture vapor transmission rate of 3 perms or greater, and

~~at one of~~ the substantially non-water-resistant polypropylene ~~or the substrate polyurethane based thermoplastic film~~ further comprising an adhesion improvement component that is blended with the substantially non-water-resistant polypropylene to improve adhesion between the polyurethane based thermoplastic film and the substantially non-water-resistant polypropylene substrate.

19. (Withdrawn) A method of manufacturing a non-asphaltic underlayment comprising applying a breathable thermoplastic film selected from the group consisting of a polyurethane based thermoplastic film, an ethylene-methacrylate or ethylene acrylic acid based thermoplastic film, a mirco-porous polyolefinic thermoplastic film, a micro-porous polyester thermoplastic film and combinations or multilayers thereof to at least one surface layer of a substrate, said breathable thermoplastic film imparts water-resistance to the substrate while maintaining the breathability of the substrate.

20. (Withdrawn) The method of claim 19 wherein the applying includes die extrusion, air spraying, dip coating, knife coating, roll coating or a film application.

21. (Withdrawn) The method of claim 19 wherein the applying comprises lamination.

22. (Withdrawn) The method of claim 19 wherein the applying comprises chemical bonding, mechanical bonding, thermal bonding or any combination thereof.

23. (Withdrawn) A roofing system comprising a non-asphaltic, breathable underlayment and one or more shingles laid-up on an uppermost layer of the underlayment, said underlayment comprising a woven or non-woven substrate in which at least one surface thereof comprises a breathable thermoplastic film selected from the group consisting of a polyurethane based thermoplastic film, an ethylene-methacrylate or ethylene acrylic acid based thermoplastic film, a mirco-porous polyolefinic thermoplastic film, a micro-porous polyester thermoplastic film and combinations or multilayers thereof disposed thereon, said breathable thermoplastic

film imparts water-resistance to the substrate without negatively impacting breathability of the substrate.

24. (Withdrawn) A roofing system comprising a non-asphaltic, breathable underlayment and one or more shingles laid-up on an uppermost layer of the underlayment, said underlayment comprising a woven or non-woven substrate in which at least one surface thereof comprises a polyurethane based thermoplastic film, disposed thereon, said polyurethane thermoplastic film imparts water-resistance to the substrate while maintaining breathability as defined in ASTM E96 standard.

25. (Withdrawn) The roofing system of claim 24 wherein the one or more shingles include asphalt-containing single or multi-ply shingles.

26. (Withdrawn) A breathable and yet water-resistant coating selected from the group consisting of a polyurethane based thermoplastic film, an ethylene-methacrylate or ethylene acrylic acid based thermoplastic film, a mirco-porous polyolefinic thermoplastic film, a micro-porous polyester thermoplastic film and combinations or multilayers thereof over a woven or a non-woven substrate.

27. (Withdrawn) The breathable and yet water-resistant coating of claim 26 wherein said underlayment forms a seal around any penetrations.

28. (Withdrawn) The breathable and yet water-resistant coating of claim 27 wherein said penetrations are the result of securing means.

29. (Withdrawn) The breathable and yet water-resistant coating of claim 28 wherein said securing means comprise nails, staples or combinations thereof.

30. (Previously Presented) The non-asphaltic underlayment of claim 1 wherein the adhesion improvement component is maleic anhydride grafted polypropylene.

31. (Previously Presented) The non-asphaltic underlayment of claim 1 wherein the adhesion improvement component is a titanate or zirconate coupling agent.

32. (Cancelled)

33. (Cancelled)

34. (Currently Amended) The non-asphaltic underlayment of claim 1 wherein the adhesion improvement component comprises at least one of:

a) Maleic anhydride grafted polypropylene ~~PP,~~ blended up to 10%~~,~~ into the breathable thermoplastic film; or

b) Titanate or Zirconate coupling agents at 5% by weight ~~of PP~~ into the breathable thermoplastic film; ~~or~~

~~c) silane treatment to glass-fiber based substrate~~.

35. (Cancelled)

36. (Previously Presented) The non-asphaltic underlayment of claim 2 wherein the skid-resistance component is a surface friction agent.